Edison Demonstration of Smallsat Networks (EDSN)

Completed Technology Project (2012 - 2016)

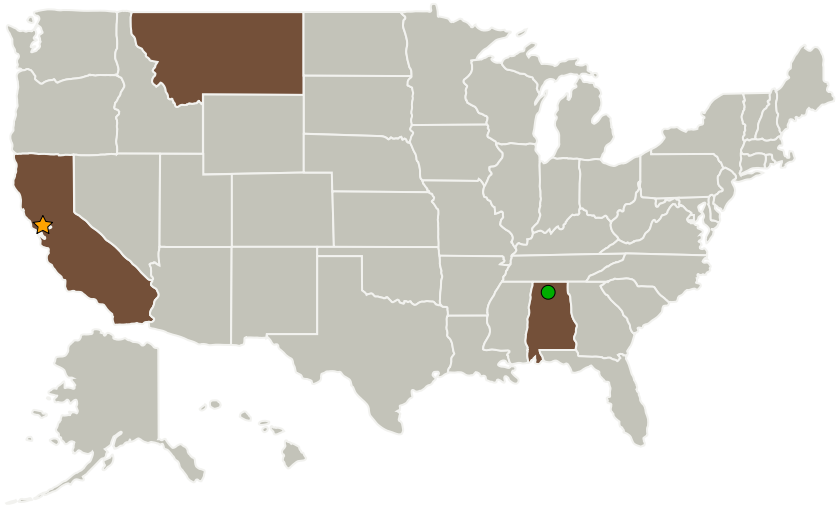
Project Introduction

The EDSN mission was to launch and deploy a swarm of 8 CubeSats into a loose formation approximately 500 km above Earth. The EDSN CubeSats swarm would have collected multipoint satellite data and transmitted the data to the ground through one CubeSat by utilizing cross-link communications between the spacecraft. The EDSN mission was lost with Super Strypi launch vehicle failure (ORS-4) on November 3, 2015. The Nodes mission later achieved many of the EDSN objectives.

Anticipated Benefits

Swarm technologies have the potential to provide flexible data correlation and distribution, system redundancy, simplification of satellite operations and the enabling of new multi- satellite science investigations through distributed architectures, sensor webs and disaggregated systems. These architectures can provide enhanced scientific data collection at reduced cost for industry, university researchers, NASA and other government agencies.

Primary U.S. Work Locations and Key Partners



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Small Spacecraft Technology

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Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
●Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama
Montana State University - Bozeman	Supporting Organization	Academia	Bozeman, Montana
Santa Clara University	Supporting Organization	Academia	Santa Clara, California

Primary U.S. Work Locations	
Alabama	California
Montana	

Project Transitions

October 2012: Project Start

January 2016: Closed out

Closeout Summary: The EDSN mission was lost with Super Strypi launch vehic le failure (ORS-4) on November 3, 2015. The Nodes mission later achieved man y of the EDSN objectives.

Links

EDSN Project Page
(https://www.nasa.gov/directorates/spacetech/small_spacecraft/edsn.html)

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Center / Facility:
Ames Research Center (ARC)

Responsible Program:
Small Spacecraft Technology

Project Management

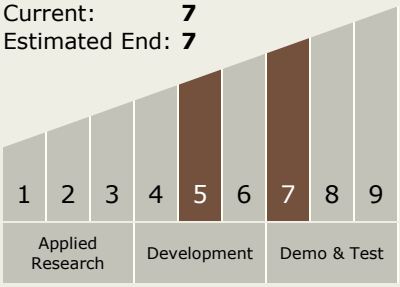
Program Director:
Christopher E Baker

Program Manager:
Roger Hunter

Principal Investigator:
Deborah M Westley Atkins

Technology Maturity (TRL)

Start: **5**
Current: **7**
Estimated End: **7**



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Technology Areas

Other/Cross-cutting:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.3 Internetworking
    - TX05.3.2 Adaptive Network Topology

Target Destination

Earth